

## CLAIMS

1. A converter having a plurality of bi-directional switch means arranged in a configuration, the converter comprising current commutation  
5 means to effect operation of the switch means to begin initiation of one switch means before de-activation of another switch means.
2. A converter according to Claim 1 comprising a first switch means and a second switch means whereby, in a first mode in use, the first switch  
10 means is activated and the second switch means is not activated, and the current commutation means is operable to activate the second switch means before the first switch means is de-activated.
3. A converter according to any preceding claim wherein the operating  
15 means comprises means to minimise the commutation interval.
4. A converter according to any preceding claim wherein the operating  
20 means comprises means to provide a commutation interval of less than those typically used as the deadtime in a Voltage Source Inverter.
5. A converter according to any preceding claim wherein the operating  
means comprises means to provide a commutation interval which approaches or equals zero.
- 25 6. A converter according to any preceding claim wherein the operating means comprises means to provide a commutation interval which is slightly negative.
7. A converter according to Claim 1 wherein the operating means  
30 comprises means to provide a commutation interval which is negative up to

the total turn-off delays and times of the switching devices used for the converter realisation.

8. A converter according to any preceding claim wherein the converter  
5 comprises a plurality of switches and timers thereby to effect reduction of the commutation interval.

9. A converter substantially as hereinbefore described with reference  
to, and/or as illustrated in, any one or more of the Figures of the  
10 accompanying drawings.

10. A method of operating a converter having a plurality of bi-directional switch means arranged in a configuration, the method comprising effecting current commutation to operate the switching means  
15 to begin activation of one switch means before de-activation of another switch means.

11. A method according to Claim 10 comprising operating the current commutation means in order to activate a second switch means before a  
20 first switch means is de-activated.

12. A method according to Claim 10 or 11 comprising minimising the commutation interval .

25 13. A method according to any of Claims 10 to 17 comprising providing commutation interval of less than those typically used as the deadtime in a Voltage Source Inverter.

14. A method according to any of Claims 10 to 13 comprising providing  
30 a commutation interval which approaches or equals zero.

15. A method according to any of Claims 10 to 14 comprising providing a commutation interval which is slightly negative.

5 16. A method according to any of Claims 10 to 15 comprising a commutation interval which is negative up to the total turn-off delays and times of the switching devices used for the converter realisation.

10 17. A method comprising operating a plurality of switches and timers thereby to effect reduction of the commutation interval.

18. A method substantially as hereinbefore described with reference to, and/or as illustrated in, any one or more of the Figures of the accompanying drawings.

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19. A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of any one of Claims 10 to 18 when said product is run on a computer.

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20. A computer program directly loadable into the internal memory of a digital computer, comprising software code portions for performing the steps of any one of Claims 10 to 18 when said program is run on a computer.

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21. A carrier, which may comprise electronic signals, for a computer program of Claim 20.

22. Electronic distribution of a computer program product of Claim 19  
30 or a computer program of Claim 20 or a carrier of Claim 21.